

IN THE CLAIMS:

Please amend the claims as follows. The claims are in the format as required by 35 C.F.R. § 1.121.

1-14. Cancelled

15. (Currently Amended) ~~The method of claim 14,~~ A method of receiving using a radio-frequency (RF) apparatus, comprising:

generating a receiving template signal, wherein generating the receiving template signal comprises convoluting a template signal with a set of code sequence elements, each of the set of code sequence elements having a timing component and an amplitude component corresponding to the timing component and wherein the set of code sequence elements is substantially a replica of a code sequence used to produce a received pulse signal;

correlating the receiving template signal with a the received pulse signal; and

decoding a detected signal, wherein the detected signal is produced by correlating the receiving template signal with the received pulse signal.

16. (Previously Presented) The method of claim 15, wherein the set of code sequence elements comprises a Barker sequence.

17. (Previously Presented) A method of transmitting using a radio-frequency (RF) apparatus, comprising:

generating a first pulse signal;

generating an impulse train from the pulse signal, wherein generating the impulse train comprises convoluting the first pulse signal with a first set of code sequence elements, each of the first set of code sequence elements having a timing component and an amplitude component corresponding to the timing component;

transmitting the impulse train;

receiving a composite signal, wherein the composite signal comprises the impulse train and at least one multipath signal;

generating a receiving template signal, wherein generating the receiving template signal comprises convoluting a template signal with a second set of code sequence elements, each of the second set of code sequence elements having a timing component and an amplitude component corresponding to the timing component;

correlating the receiving template signal with the composite signal to produce a detected signal; and

decoding the detected signal.

18. (New) The method of claim 17, wherein the first set of code sequence elements comprises a Barker sequence.

19. (New) The method of claim 18, wherein the second set of code sequence elements comprises a Barker sequence.

20. (New) A radio-frequency (RF) apparatus, comprising:

a RF receiver operable to:

generate a receiving template signal by convoluting a template signal with a set of code sequence elements, each of the set of code sequence elements having a timing component and an amplitude component corresponding to the timing component and wherein the set of code sequence elements is substantially a replica of a code sequence used to produce a received pulse signal,

correlate the receiving template signal with the received pulse signal, and

decode a detected signal, wherein the detected signal is produced by correlating the receiving template signal with the received pulse signal.

21. (New) The radio-frequency (RF) apparatus of claim 20, wherein the set of code sequence elements comprises a Barker sequence.

22. (New) A radio-frequency (RF) apparatus, comprising:

an RF transmitter operable to:

generate a first pulse signal,

generate a pulse train from the pulse signal, wherein generating the pulse train comprises convoluting the first pulse signal with a first set of code sequence elements, each of the first set of code sequence elements having a timing component and an amplitude component corresponding to the timing component,

transmitting the pulse train; and

an RF receiver operable to:

receive a composite signal, wherein the composite signal comprises the pulse train and at least one multipath signal,

generate a receiving template signal, wherein generating the receiving template signal comprises convoluting a template signal with a second set of code sequence elements, each of the second set of code sequence elements having a timing component and an amplitude component corresponding to the timing component,

correlate the receiving template signal with the composite signal to produce a detected signal, and

decode the detected signal.

23. (New) The radio-frequency (RF) apparatus of claim 22, wherein the first set of code sequence elements comprises a Barker sequence.

24. (New) The radio-frequency (RF) apparatus of claim 23, wherein the second set of code sequence elements comprises a Barker sequence.

25. (New) A method of transmitting using a radio-frequency (RF) apparatus, comprising:

generating a first pulse signal;

generating a pulse train from the pulse signal, wherein generating the pulse train comprises convoluting the first pulse signal with a first set of code sequence elements, each of the first set of code sequence elements having a timing component and an amplitude component corresponding to the timing component;

transmitting the pulse train;

receiving a composite signal, wherein the composite signal comprises the pulse train

and at least one multipath signal;

generating a receiving template signal, wherein generating the receiving template signal comprises convoluting a template signal with a second set of code sequence elements, each of the second set of code sequence elements having a timing component and an amplitude component corresponding to the timing component;

correlating the receiving template signal with the composite signal to produce a detected signal; and

decoding the detected signal.